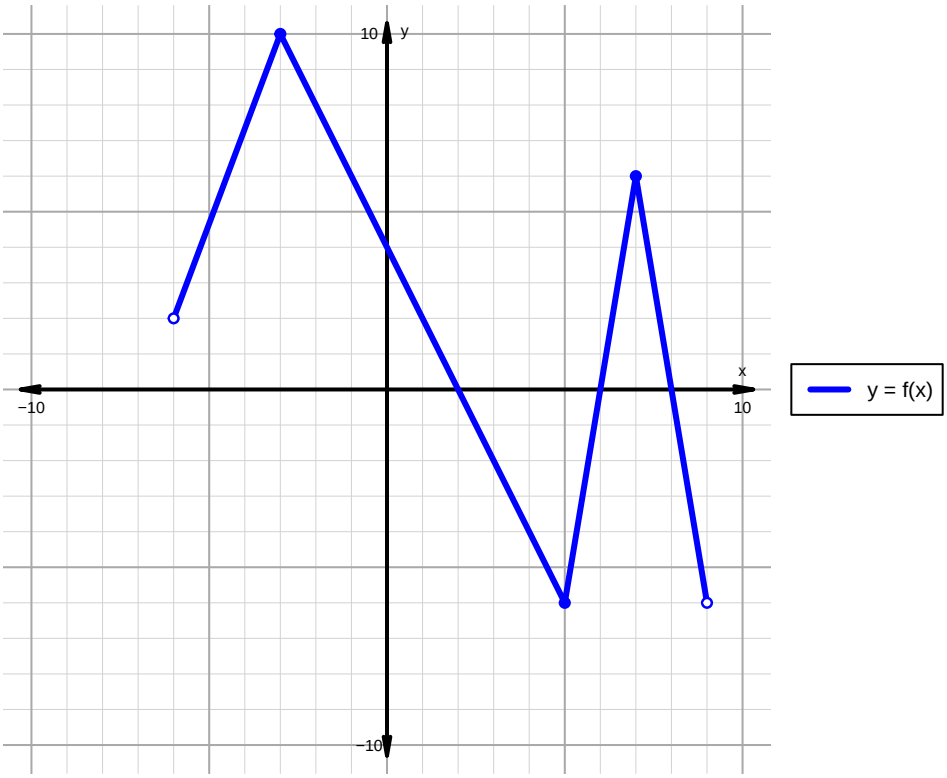
Name: Date:

Intervals, Transformations, and Slope Solution (version 25)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-6, 2) \cup (6, 8)$
Negative	$(2, 6) \cup (8, 9)$
Increasing	$(-6, -3) \cup (5, 7)$
Decreasing	$(-3, 5) \cup (7, 9)$
Domain	$(-6, 9)$
Range	$(-6, 10)$

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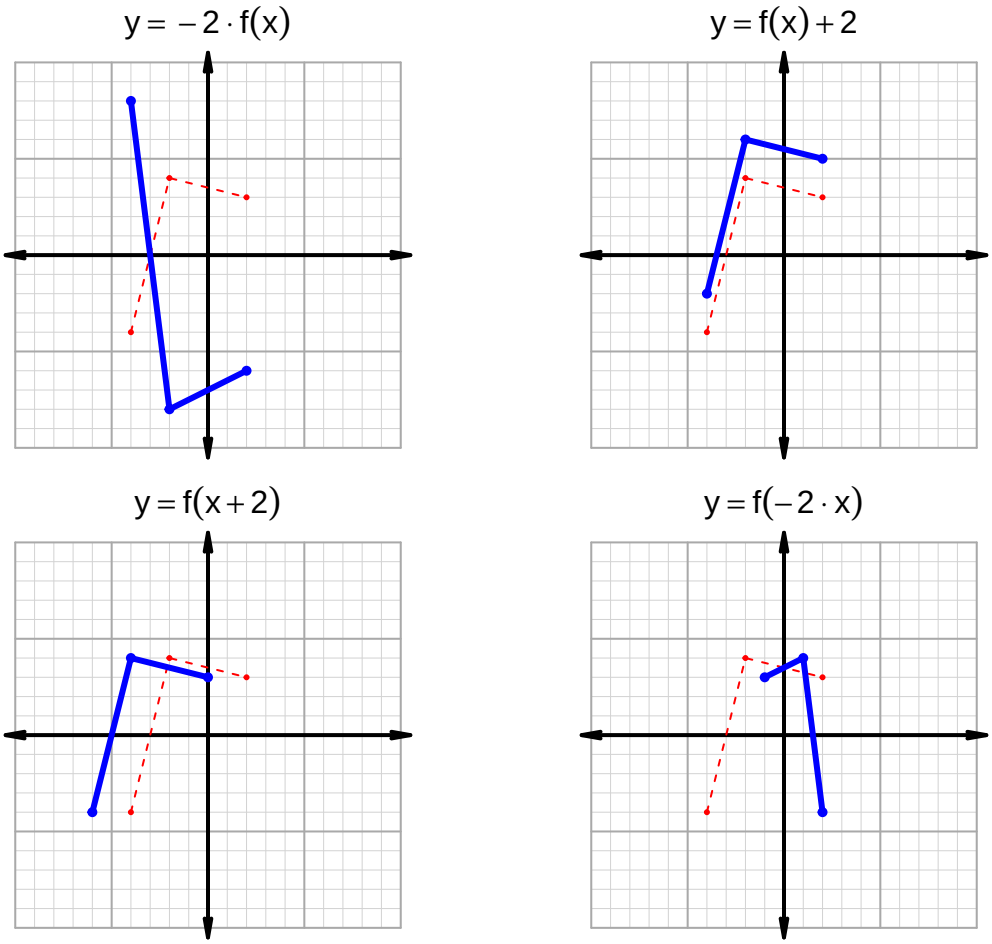
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 28$ and $x_2 = 43$. Express your answer as a reduced fraction.

x	$g(x)$
28	50
43	44
44	28
50	43

$\frac{f(43)-f(28)}{43-28} = \frac{44-50}{43-28} = \frac{-6}{15}$

The greatest common factor of -6 and 15 is 3. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-2}{5}$$